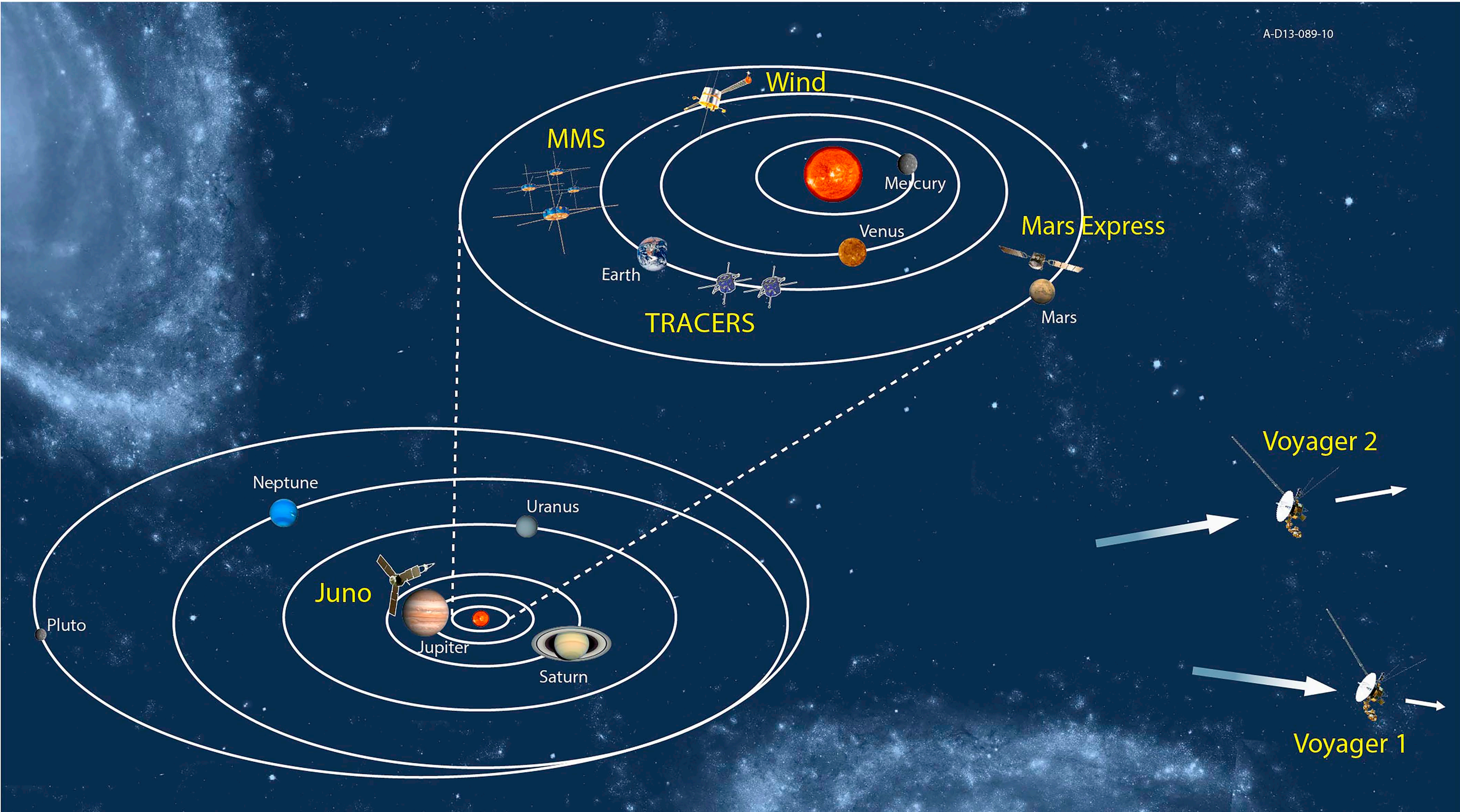


# UNIVERSITY OF IOWA INSTRUMENTS IN SPACE

A-D13-089-10



## Spaceflight instruments and rockets designed and built at the University of Iowa in the Department of Physics & Astronomy (1958-2025)

\* Spacecraft carrying currently operating U. of Iowa instruments

| Spacecraft                       | Launch Date (UT) |
|----------------------------------|------------------|
| Explorer 1                       | 1958 Feb. 1      |
| Explorer 2 (launch failure)      | 1958 Mar. 5      |
| Explorer 3                       | 1958 Mar. 26     |
| Explorer 4                       | 1958 July 26     |
| Explorer 5 (launch failure)      | 1958 Aug. 24     |
| Pioneer 1                        | 1958 Oct. 11     |
| Pioneer 2                        | 1958 Nov. 8      |
| Pioneer 3                        | 1958 Dec. 6      |
| Pioneer 4                        | 1959 Mar. 3      |
| Explorer 7 (launch failure)      | 1959 Jul. 16     |
| Explorer 7                       | 1959 Oct. 13     |
| S-46 (launch failure)            | 1960 Mar. 23     |
| Injun 1                          | 1961 June 29     |
| Explorer 12                      | 1961 Aug. 16     |
| Ranger 1 (failed to reach orbit) | 1961 Aug. 23     |
| TRAAC                            | 1961 Nov. 15     |
| Ranger 2 (failed to reach orbit) | 1961 Nov. 18     |
| Injun 2 (launch failure)         | 1962 Jan. 24     |
| Discoverer 38                    | 1962 Feb. 27     |
| Mariner 1 (launch failure)       | 1962 Jul. 22     |
| Mariner 2                        | 1962 Aug. 27     |
| Explorer 14                      | 1962 Oct. 2      |
| Explorer 15                      | 1962 Oct. 27     |
| Injun 3                          | 1962 Dec. 12     |
| Relay 1                          | 1962 Dec. 13     |
| P-11                             | 1964 Aug. 14     |
| OGO 1                            | 1964 Sept. 5     |
| Mariner 3 (shroud failure)       | 1964 Nov. 5      |
| Injun 4                          | 1964 Nov. 21     |
| Mariner 4                        | 1964 Nov. 28     |
| OGO 2                            | 1965 Oct. 14     |
| OGO 3                            | 1966 June 7      |
| Explorer 33 (IMP-D)              | 1966 July 1      |
| Explorer 34 (IMP-4)              | 1967 May 24      |
| Mariner 5                        | 1967 June 14     |
| Explorer 35 (IMP-E)              | 1967 July 19     |
| OGO 4                            | 1967 July 28     |
| OGO 5                            | 1968 Mar. 4      |

| Spacecraft                                      | Launch Date (UT) |
|-------------------------------------------------|------------------|
| Injun 5                                         | 1968 Aug. 8      |
| Explorer 41 (IMP-5)                             | 1969 June 21     |
| Explorer 43 (IMP-6)                             | 1971 Mar. 13     |
| Explorer 45 (SSS)                               | 1971 Nov. 16     |
| UK 4 (Ariel-4)                                  | 1971 Dec. 11     |
| Pioneer 10                                      | 1972 Mar. 2      |
| Explorer 47 (IMP-7)                             | 1972 Sept. 23    |
| Pioneer 11                                      | 1973 Apr. 6      |
| Explorer 50 (IMP-8)                             | 1973 Oct. 26     |
| Hawkeye 1                                       | 1974 June 3      |
| Helios 1                                        | 1974 Dec. 10     |
| Helios 2                                        | 1976 Jan. 15     |
| Voyager 2 *                                     | 1977 Aug. 20     |
| Voyager 1 *                                     | 1977 Sept. 5     |
| International Sun-Earth Explorer 1              | 1977 Oct. 22     |
| International Sun-Earth Explorer 2              | 1977 Oct. 22     |
| International Sun-Earth Explorer 3              | 1978 Aug. 12     |
| Firewheel (launch failure)                      | 1980 May 25      |
| Dynamic Explorer 1                              | 1981 Aug. 3      |
| Plasma Diagnostics Package (shuttle Columbia)   | 1982 Mar. 22     |
| AMPTE / IRM                                     | 1984 Aug. 16     |
| Plasma Diagnostics Package (shuttle Challenger) | 1985 Jul. 29     |
| Galileo                                         | 1989 Oct. 18     |
| CRRES                                           | 1990 July 25     |
| Geotail                                         | 1992 July 24     |
| Wind *                                          | 1994 Nov. 1      |
| Polar                                           | 1996 Feb. 24     |
| Cluster I (4 spacecraft) (launch failure)       | 1996 June 4      |
| Cassini                                         | 1997 Oct. 15     |
| Cluster / Salsa (FM6)                           | 2000 July 16     |
| Cluster / Samba (FM7)                           | 2000 July 16     |
| Cluster / Tango (FM8)                           | 2000 Aug. 9      |
| Cluster / Rumba (FM5)                           | 2000 Aug. 9      |
| Mars Express *                                  | 2003 June 2      |
| Juno *                                          | 2011 Aug. 5      |
| Van Allen Probe A                               | 2012 Aug. 30     |
| Van Allen Probe B                               | 2012 Aug. 30     |
| Magnetospheric Multiscale Mission / 1 *         | 2015 Mar. 12     |

| Spacecraft                              | Launch Date (UT) |
|-----------------------------------------|------------------|
| Magnetospheric Multiscale Mission / 2 * | 2015 Mar. 12     |
| Magnetospheric Multiscale Mission / 3 * | 2015 Mar. 12     |
| Magnetospheric Multiscale Mission / 4 * | 2015 Mar. 12     |
| HERCI CubeSat (Fox-1D satellite)        | 2018 Jan. 12     |
| HaloSat Cube Satellite                  | 2018 May 21      |
| TRACERS A *                             | 2025 July 23     |
| TRACERS B *                             | 2025 July 23     |

| Experiments on Rockets                                              | Launch Date   |
|---------------------------------------------------------------------|---------------|
| Rockoons (109 launches) payloads and casings                        | 1951-1957     |
| Javelin 8:45 experiment                                             | 1967 Sept. 21 |
| Javelin 8:46 experiment                                             | 1968 May 25   |
| Spear 1 pressure gauge                                              | 1987 Dec. 13  |
| Spear 3 pressure gauge                                              | 1993 Mar. 15  |
| Rocket Auroral Correlator Experiment                                | 2002 Feb. 6   |
| High Bandwidth Auroral Rocket                                       | 2003 Jan. 28  |
| Correlations of High Frequencies & Auroral Roar Mission             | 2007 Feb. 28  |
| Twin Rockets to Investigate Cusp Electrodynamics Mission 1/A        | 2007 Dec. 10  |
| Twin Rockets to Investigate Cusp Electrodynamics Mission 1/B        | 2007 Dec. 10  |
| Auroral Current and Electrodynamic Structure Rocket (ACES)          | 2009 Jan. 29  |
| Black Brant IX Sounding Rocket/CyXESS Mission                       | 2009 Nov. 13  |
| Correlations of High Frequencies & Auroral Roar Mission             | 2010 Feb. 17  |
| Off-Plane Grating Rocket for Extended Source Spectroscopy 1         | 2015 May 2    |
| Twin Rockets to Investigate Cusp Electrodynamics Mission 2/A        | 2018 Dec. 8   |
| Twin Rockets to Investigate Cusp Electrodynamics Mission 2/B        | 2018 Dec. 8   |
| Cusp Alfvén & Plasma Electrodynamics Rocket 2                       | 2019 Jan. 4   |
| Investigation of Cusp Irregularities 5 (ICI-5) Mission              | 2019 Nov. 26  |
| VLF Trans-Ionospheric Propagation Exp. Rocket (VIPER) search coils  | 2021 May 26   |
| Loss through Auroral Microburst Pulsations (LAMP) instrument        | 2022 Mar. 5   |
| Auroral Current & Electrodynamic Structure (ACES) Rocket 2/A        | 2022 Nov. 20  |
| Auroral Current & Electrodynamic Structure (ACES) Rocket 2/B        | 2022 Nov. 20  |
| COUSIN - Study of small-scale auroral region energy deposition      | 2026 TBD      |
| OCHRE (Observing Cusp High-Altitude Reconnection & Electrodynamics) | 2026 TBD      |
| Investigation of Cusp Irregularities 5bis (ICI-5bis) Pathfinder     | TBD           |